

Usrp2 Guide

Secure Your Wireless Networks the Hacking Exposed Way Defend against the latest pervasive and devastating wireless attacks using the tactical security information contained in this comprehensive volume. Hacking Exposed Wireless reveals how hackers zero in on susceptible networks and peripherals, gain access, and execute debilitating attacks. Find out how to plug security holes in Wi-Fi/802.11 and Bluetooth systems and devices. You'll also learn how to launch wireless exploits from Metasploit, employ bulletproof authentication and encryption, and sidestep insecure wireless hotspots. The book includes vital details on new, previously unpublished attacks alongside real-world countermeasures. Understand the concepts behind RF electronics, Wi-Fi/802.11, and Bluetooth Find out how hackers use NetStumbler, WiSPY, Kismet, KisMAC, and AiroPeek to target vulnerable wireless networks Defend against WEP key brute-force, aircrack, and traffic injection hacks Crack WEP at new speeds using Field Programmable Gate Arrays or your spare PS3 CPU cycles Prevent rogue AP and certificate authentication attacks Perform packet injection from Linux

Launch DoS attacks using device driver-independent tools Exploit wireless device drivers using the Metasploit 3.0 Framework Identify and avoid malicious hotspots Deploy WPA/802.11i authentication and encryption using PEAP, FreeRADIUS, and WPA pre-shared keys

Reliable positioning and navigation is becoming imperative in more and more applications for public services, consumer products, and safety-critical purposes. Research for finding pervasive and robust positioning methodologies is critical for a growing amount of societal areas while making sure that navigation is trustworthy and the risks and threats of especially satellite navigation are accounted for. This book provides a comprehensive survey of the effect of radio-frequency interference (RFI) on the Global Navigation Satellite Systems (GNSS) as well as of the spoofing threats. Through case studies and practical implementation/applications, this resource presents engineers and scientists with a better understanding of interference and spoofing threats, ultimately helping them to design and implement robust systems. The book starts with a completely fresh perspective on introduction to signals and

continues to dealing with complex numbers without any complicated mathematics. The only skills you require are addition, multiplication and knowing what \cos and \sin are! The topics of discrete domains - both time and frequency - are explained in an intuitive manner such that traveling between the two through Discrete Fourier Transform (DFT) becomes quite natural. Furthermore, the concepts needed to implement modern digital communication systems such as convolution, filters and multirate signal processing are illustrated through the help of beautiful figures. Next, the book demystifies modulation and demodulation in a way easy to grasp even for a non-technical reader. The focus is on linear modulations, particularly Pulse Amplitude Modulation (PAM), Quadrature Amplitude Modulation (QAM) and Phase Shift Keying (PSK). Matched filtering is clarified in time, frequency and mathematical details in a story-like development. In addition, the topic of pulse shape filtering is covered in a depth and from angles never described anywhere before. The book continues with stethoscopes of a communication system, namely eye diagrams and scatter plots and towards the error rates of various modulation schemes along with the

energy scaling factors of respective blocks. Finally, their spectral efficiencies are described taking into account the bandwidth, signal-to-noise ratio and data rates. This text is a simple way for you to enter at the beginner level and make your way up to wireless system design. Mathematics is included at a school level. I rely more on visualizing equations through beautiful figures. Therefore, you will encounter numerous figures throughout the text with logical and intuitive explanations. But you will not encounter any integrals, probability theory and detection/estimation theory. You will not even find any e or j of complex numbers either. The most complicated notation I have used is "sum everything from N_1 to N_2 ." Simulation is integral to the successful design of modern radar systems, and there is arguably no better software for this purpose than MATLAB. But software and the ability to use it does not guarantee success. One must also: Understand radar operations and design philosophy Know how to select the radar parameters to meet the design req

Concepts, Applications, Experimentation and Analysis

A Multi-Standard Multi-Mode Approach

7th International ICST Conference, MOBIMEDIA

2011, Calgari, Italy, September 5-7, 2011,
Revised Selected Papers
Digital Communications
Selected Advances on Spectrum Sensing,
Learning, and Security Approaches
Software-Defined Radio for Engineers

This book explore the use of new technologies in the area of satellite navigation receivers. In order to construct a reconfigurable receiver with a wide range of applications, the authors discuss receiver architecture based on software-defined radio techniques. The presentation unfolds in a user-friendly style and goes from the basics to cutting-edge research. The book is aimed at applied mathematicians, electrical engineers, geodesists, and graduate students. It may be used as a textbook in various GPS technology and signal processing courses, or as a self-study reference for anyone working with satellite navigation receivers.

Aging of the power transmission lines raises the possibility of blackouts in power systems. Blackouts annually cost U.S. businesses several hundred billion dollars on average. By monitoring power transmission lines, blackouts can be predicted and prevented. In this thesis, a novel wireless sensor network (WSN) for monitoring the transmission line is proposed and implemented. TelosB motes, from the University of California, Berkeley mote family, are used as sensor nodes. These devices possess desirable properties for our proposed WSN such as portability and very low power consumption. Also their radio component uses the IEEE 802.15.4 as its communication protocol. The important features of transceivers based on this protocol are very low manufacturing costs, structural simplicity, and power management functions such as link quality. TelosB motes have limited memory and computational capabilities. In addition, their hardware abstraction creates limitations in accessing the physical and Media Access Control (MAC) layer. Our network requires

some nodes to be more computationally powerful than TelosB motes and able to simultaneously receive and process the information from several other nodes. In this thesis, Universal Software Radio Peripherals (USRPs) have been used for these nodes. USRPs are indeed Software Defined Radio (SDR) platforms. The USRP-USRP communication was characterized by investigating the relationship of Received Signal Strength (RSSI) Indicator, Signal to Noise Ratio (SNR), and Packet Error Rate (PER) with distance for different data rates and modulations. Finally, the communication link between USRP and TelosB is established and the relationship between ix PER versus distance has been shown. Our experiments have been shown that the USRP can receive information from a TelosB mote in several-meters distance. Therefore, we propose a WSN where sensors are located on transmission towers and the distance between sensors and USRPs are within the guidelines.

This is the first book on the subject of multi-standard wireless receivers. It covers both the analysis and design aspects of CMOS radio receivers, with primary focus on receivers for mobile terminals. The subject of multi-standard data converter design for base stations is also covered.

Classical and Modern Direction of Arrival Estimation contains both theory and practice of direction finding by the leading researchers in the field. This unique blend of techniques used in commercial DF systems and state-of-the art super-resolution methods is a valuable source of information for both practicing engineers and researchers. Key topics covered are: Classical methods of direction finding Practical DF methods used in commercial systems Calibration in antenna arrays Array mapping, fast algorithms and wideband processing Spatial time-frequency distributions for DOA estimation DOA estimation in threshold region Higher order statistics for DOA estimation Localization in sensor networks and direct position estimation Brings together in one book classical and modern DOA techniques, showing the connections between them Contains

contributions from the leading people in the field Gives a concise and easy- to- read introduction to the classical techniques Evaluates the strengths and weaknesses of key super-resolution techniques Includes applications to sensor networks

GNSS Interference Threats and Countermeasures

A Software-Defined GPS and Galileo Receiver

Cognitive Communication and Cooperative HetNet Coexistence

Implementing Software Defined Radio

A Software Approach

Software Radio

ARCHIE 3000 is the complete collection featuring the classic series. This is presented in the new higher-end format of Archie Comics Presents, which offers 200+ pages at a value while taking a design cue from successful all-ages graphic novels. Travel to the 31st Century with Archie and his friends! In the year 3000, Riverdale is home to hoverboards, intergalactic travel, alien life and everyone's favorite space case, Archie! Follow the gang as they encounter detention robots, teleporters, wacky fashion trends and much more. Will the teens of the future get in as much trouble as the ones from our time? The clear, easy-to-understand introduction to digital communications Completely updated coverage of today's most critical technologies Step-by-step implementation coverage Trellis-coded modulation, fading channels, Reed-Solomon codes, encryption, and more

Exclusive coverage of maximizing performance with advanced "turbo codes" "This is a remarkably comprehensive treatment of the field, covering in considerable detail modulation, coding (both source and channel), encryption, multiple access and spread spectrum. It can serve both as an excellent introduction for the graduate student with some background in probability theory or as a valuable reference for the practicing communication system engineer. For both communities, the treatment is clear and well presented." - Andrew Viterbi, The Viterbi Group Master every key digital communications technology, concept, and technique. Digital Communications, Second Edition is a thoroughly revised and updated edition of the field's classic, best-selling introduction. With remarkable clarity, Dr. Bernard Sklar introduces every digital communication technology at the heart of today's wireless and Internet revolutions, providing a unified structure and context for understanding them -- all without sacrificing mathematical precision. Sklar begins by introducing the fundamentals of signals, spectra, formatting, and baseband transmission. Next, he presents practical coverage of virtually every contemporary

modulation, coding, and signal processing technique, with numeric examples and step-by-step implementation guidance. Coverage includes: Signals and processing steps: from information source through transmitter, channel, receiver, and information sink Key tradeoffs: signal-to-noise ratios, probability of error, and bandwidth expenditure Trellis-coded modulation and Reed-Solomon codes: what's behind the math Synchronization and spread spectrum solutions Fading channels: causes, effects, and techniques for withstanding fading The first complete how-to guide to turbo codes: squeezing maximum performance out of digital connections Implementing encryption with PGP, the de facto industry standard Whether you're building wireless systems, xDSL, fiber or coax-based services, satellite networks, or Internet infrastructure, Sklar presents the theory and the practical implementation details you need. With nearly 500 illustrations and 300 problems and exercises, there's never been a faster way to master advanced digital communications. CD-ROM INCLUDED The CD-ROM contains a complete educational version of Elanix' SystemView DSP design software, as well as detailed notes for getting started, a comprehensive DSP tutorial, and over 50

additional communications exercises.

The Latest Linux Security Solutions This authoritative guide will help you secure your Linux network--whether you use Linux as a desktop OS, for Internet services, for telecommunications, or for wireless services. Completely rewritten the ISECOM way, Hacking Exposed Linux, Third Edition provides the most up-to-date coverage available from a large team of topic-focused experts. The book is based on the latest ISECOM security research and shows you, in full detail, how to lock out intruders and defend your Linux systems against catastrophic attacks. Secure Linux by using attacks and countermeasures from the latest OSSTMM research Follow attack techniques of PSTN, ISDN, and PSDN over Linux Harden VoIP, Bluetooth, RF, RFID, and IR devices on Linux Block Linux signal jamming, cloning, and eavesdropping attacks Apply Trusted Computing and cryptography tools for your best defense Fix vulnerabilities in DNS, SMTP, and Web 2.0 services Prevent SPAM, Trojan, phishing, DoS, and DDoS exploits Find and repair errors in C code with static analysis and Hoare Logic

This book constitutes the thoroughly refereed post-conference proceedings of the 7th

International ICST Conference on Mobile Multimedia Communications (MOBIMEDIA 2011) held in Cagliari, Italy, in September 2011 The 26 revised full papers presented were carefully selected from numerous submissions and focus topics such as quality of experience, dynamic spectrum access wireless networks in the TV white spaces, media streaming, mobile visual search, image processing and transmission, and mobile applications.

In Battle for Peace

The Ultimate Spanish Review and Practice, 4th Edition

Digital Wireless Communication

Digital Signal Processing with Field

Programmable Gate Arrays

Hacking Exposed Wireless, Second Edition

The Story of My 83rd Birthday

We consider first the folded normal probability density function, especially as it relates to the original normal population from which it came. We present some maximum likelihood estimates, followed by other estimating procedures which are simpler to handle...Finally, an example of real camber data is presented with the appropriate estimation of the theoretical distributions. Some remarks of

the folded normal and other work being done on this conclude the paper.

A comprehensive and up-to-date one-stop reference for engineers working in power amplifier modeling or RF designers using power amplifier models.

IT Convergence and Services is proceedings of the 3rd FTRA International Conference on Information Technology Convergence and Services (ITCS-11) and the FTRA

International Conference on Intelligent Robotics, Automations, telecommunication facilities, and applications (IRoA-11).

The topics of ITCS and IRoA cover the current hot topics satisfying the world-wide ever-changing needs. The ITCS-11 will be the most comprehensive conference focused on the various aspects of advances in information technology convergence, applications, and services. The ITCS-11 will provide an opportunity for academic and industry professionals to discuss the latest issues and progress in the area of ITCS. In addition, the conference will publish high quality papers which are closely related to the various theories, modeling, and practical applications in ITCS. The main scope of ITCS-11 is as follows. Computational Science and Applications Electrical and Electronics Engineering and Technology Manufacturing

Technology and Services Management
Information Systems and Services
Electronic Commerce, Business and
Management Vehicular Systems and
Communications Bio-inspired Computing and
Applications IT Medical Engineering
Modeling and Services for Intelligent
Building, Town, and City The IROA is a
major forum for scientists, engineers, and
practitioners throughout the world to
present the latest research, results,
ideas, developments and applications in
all areas of intelligent robotics and
automations. The main scope of IROA-11 is
as follows. Intelligent Robotics &
Perception systems Automations & Control
Telecommunication Facilities Artificial
Intelligence The IROA is a major forum for
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& Control Telecommunication Facilities
Artificial Intelligence

This book discusses various applications
of machine learning using a new approach,
the dynamic wavelet fingerprint technique,
to identify features for machine learning

and pattern classification in time-domain signals. Whether for medical imaging or structural health monitoring, it develops analysis techniques and measurement technologies for the quantitative characterization of materials, tissues and structures by non-invasive means.

Intelligent Feature Selection for Machine Learning using the Dynamic Wavelet Fingerprint begins by providing background information on machine learning and the wavelet fingerprint technique. It then progresses through six technical chapters, applying the methods discussed to particular real-world problems. These chapters are presented in such a way that they can be read on their own, depending on the reader's area of interest, or read together to provide a comprehensive overview of the topic. Given its scope, the book will be of interest to practitioners, engineers and researchers seeking to leverage the latest advances in machine learning in order to develop solutions to practical problems in structural health monitoring, medical imaging, autonomous vehicles, wireless technology, and historical conservation.

IT Convergence and Services

Cognitive Radio Networks

Wireless Sensor Networks and Software

Defined Radios in Power Transmission Line Monitoring

iOS Hacker's Handbook

Software Defined Radio Using MATLAB & Simulink and the RTL-SDR

RF Power Amplifier Behavioral Modeling

Inside Radio: An Attack and Defense Guide Springer

With the evolution of technology, vehicles are becoming increasingly connected and automated. They have evolved into rich sensing platforms with a plethora of diverse sensors, generating large amounts of real-time data including the location information, speed, acceleration, steering angle etc. With the recent advances of intelligent vehicle systems and Dedicated Short Range Communication (DSRC) devices, this data is broadcasted multiple times per second, so that each vehicle can be aware of nearby vehicles. However, such systems may fail to provide the location information if DSRC is not supported by one of the vehicles or in the case of a GPS unavailability and some of the shared data over DSRC or other networks could jeopardize user privacy. In this work, we focus on developing techniques that improve available location information and demonstrate the driver specificity of the shared data over such systems. GPS is widely used in critical infrastructures but is vulnerable to radio frequency (RF) interference. A common source of interference

are commercial drivers that use GPS jammers to circumvent vehicle tracking systems. Existing mechanisms to detect and identify such interference emitting vehicles on roadways require a large number of specialized detectors or a manual observation process. To detect GPS jammers on roads, we designed a system that could detect any transmission at GPS L1 frequency. The key components of the system are monitoring stations (which are equipped with directional antennas and cameras) and mobile detectors (e.g., smartphones). Using an off-the-shelf software-defined radio (USRP) to emulate GPS jamming signals, we conducted a case study evaluation of our system with multiple trial drives on local highways in 2 US cities and found the monitoring stations effective. Through our experiments on a local highway with a vehicle transmitting interference in the 900MHz ISM band, we found that the vehicle identification rate of our mechanism is 65% for a single-point setup and 100% for a two-point setup. To study the privacy of the data shared among vehicles, we designed a system that can access a rich set of in-vehicle sensor data through a custom CAN bus interface and examined its driver specificity. We designed classifier features that allow distinguishing drivers based on a minimal set of sensor data. We evaluated the system with data from 480 real-world trips collected over 3 weeks from five university mail vans, with 24 drivers in

a controlled experiment, and 103 trips with four drivers across two households. Our system could achieve 91% accuracy within the 20s after the driver enters the vehicle in the real world experiments. While the stream of rich sensor data can be communicated to and processed in a remote cloud, bandwidth and latency challenges encourage computation of this data on the vehicles themselves. With high computing powers and less power consumption, vehicles can sense the dynamic environment like no other platform. We propose to use harvesting vehicles as edge compute nodes, focusing on sensing and interpretation of traffic from live video streams. This work proposes effective fine-grained traffic volume estimation using in-vehicle dashboard mounted cameras. With the proposed system, we collect the footage of the traffic, detect vehicles using a real-time object detection method and estimate the lane of travel with the speed information for vehicles that are traveling in both directions. With such an information, not only the current positions of vehicles but also the estimated future positions of vehicles could be shown on a map. We conduct studies on different roads, our vehicle detection accuracy is over 75% even for highly occupied roads, and our speed estimation error is less than 12%. We could also estimate the lane of travel with over 80% accuracy.

From personal music players to anti-lock brakes

and advanced digital flight controllers, the demand for real-time digital signal processing (DSP) continues to grow. Mastering real-time DSP is one of the most challenging and time-consuming pursuits in the field, exacerbated by the lack of a resource that solidly bridges the gap between theory and practice. Recognizing that there is a better way forward, accomplished experts Welch, Wright, and Morrow offer Real-Time Digital Signal Processing from MATLAB to C with the TMS320C6x DSK. This book collects all of the necessary tools in a single, field-tested source of unrivaled authority. The authors seamlessly integrate theory with easy-to-use, inexpensive hardware and software tools in an approachable and hands-on manner. Using abundant examples and exercises in a step-by-step approach, they work from familiar interfaces such as MATLAB® to running algorithms in real-time on industry-standard DSP hardware. For each concept, the book uses a four-step methodology: a brief review of relevant theory; demonstration of the concept in winDSK6, an easy-to-use software tool; explanation and demonstration of MATLAB techniques for implementation; and explanation of the necessary C code to implement the algorithms in real time. Covering a broad spectrum of topics in a hands-on, concise, and approachable way, Real-Time Digital Signal Processing from MATLAB to C with the

TMS320C6x DSK paves the way toward mastery of real-time DSP. Essential source code is available for download.

All the expert guidance you need to understand, build, and operate GPS receivers The Second Edition of this acclaimed publication enables readers to understand and apply the complex operation principles of global positioning system (GPS) receivers. Although GPS receivers are widely used in everyday life to aid in positioning and navigation, this is the only text that is devoted to complete coverage of their operation principles. The author, one of the foremost authorities in the GPS field, presents the material from a software receiver viewpoint, an approach that helps readers better understand operation and that reflects the forecasted integration of GPS receivers into such everyday devices as cellular telephones. Concentrating on civilian C/A code, the book provides the tools and information needed to understand and exploit all aspects of receiver technology as well as relevant navigation schemes: Overview of GPS basics and the constellation of satellites that comprise the GPS system Detailed examination of GPS signal structure, acquisition, and tracking Step-by-step presentation of the mathematical formulas for calculating a user's position Demonstration of the use of computer programs to run key equations Instructions for developing

hardware to collect digitized data for a software GPS receiver Complete chapter demonstrating a GPS receiver following a signal flow to determine a user's position The Second Edition of this highly acclaimed text has been greatly expanded, including three new chapters: Acquisition of weak signals Tracking of weak signals GPS receiver related subjects Following the author's expert guidance and easy-to-follow style, engineers and scientists learn all that is needed to understand, build, and operate GPS receivers. The book's logical flow from basic concepts to applications makes it an excellent textbook for upper-level undergraduate and graduate students in electrical engineering, wireless communications, and computer science.

Wireless Sensor Networks

A Single-Frequency Approach

From Fundamentals to Advance in LabVIEW and Dedicated Hardware - USRP 2920 and Vector Signal Transceiver VST 5644R

A Modern Approach to Radio Engineering

Enhancing Vehicle Data Availability and Privacy for Connected Cars

Archie 3000

Gain the essential grammar skills needed to communicate more confidently in Spanish! Developing a good grasp of grammar is key to mastering a foreign language. This bestselling guide provides comprehensive coverage of all the elements of Spanish grammar. Each grammatical concept is

clarified and then illustrated with lively example sentences. More than 400 exercises provide you with plenty of practice to apply this knowledge in everyday conversation. The exercises are contextualized with scene-setting instructions in Spanish to ensure relevance to practice conversational and writing requirements. With this edition, you ' ll also have access to the unique McGraw-Hill Education Language app featuring extensive audio recordings and interactive quizzes. The app makes it easy to study on-the-go, test your comprehension, and hone your new language skills. The Ultimate Spanish Review and Practice, 4th Edition features:

- More than 400 engaging exercises
- A pre-test to identify your existing strengths and weaknesses
- A post-test for assessing your progress
- Flashcards for all the vocabulary lists with progress tracking
- Extensive audio exercises to test your listening comprehension
- Interactive quizzes, and more

Fueled by ongoing and increasing consumer demand, the explosive growth in spectrum-based communications continues to tax the finite resources of the available spectrum. One possible solution, Cognitive Radio Network (CRN), allows unlicensed users opportunistic access to licensed bands without interfering with existing users.

Although some initial study has been conducted in this field, researchers need a systematic reference book that presents clear definitions, functions, and current challenges of the CRNs. Cognitive Radio Networks presents state-of-the-art approaches and novel technologies for cognitive wireless radio networks and sheds light on future developments in

these areas. Comprising the contributions of many prominent world-wide cognitive radio researchers, this book covers all CRN essentials including spectrum sensing, spectrum handoff, spectrum sharing, and CRN routing schemes. Divided into five parts, the book addresses the physical layer, medium access control, the routing layer, cross-layer considerations and advanced topics in cognitive radio networks. The chapters also review research, management, support, and cognitive techniques such as position and network awareness, infrastructure and physical and link layer concerns. The editors of this volume are noted experts in the field of wireless networks and security. Dr. Yang Xiao ' s research has been supported by the U.S. National Science Foundation (NSF), U.S. Army Research, Fleet & Industrial Supply Center San Diego (FISCSD), and the University of Alabama ' s Research Grants Committee. Dr. Fei Hu has worked with NSF, Cisco, Lockheed Martin, Sprint, and other organizations. By bringing together the combined input of international experts, these editors have advanced the field of this nascent technology and helped to forge new paths of discovery for progressive communications possibilities.

The availability of the RTL-SDR device for less than \$20 brings software defined radio (SDR) to the home and work desktops of EE students, professional engineers and the maker community. The RTL-SDR can be used to acquire and sample RF (radio frequency) signals transmitted in the frequency range 25MHz to 1.75GHz, and the MATLAB and Simulink environment can be used to develop receivers

using first principles DSP (digital signal processing) algorithms. Signals that the RTL-SDR hardware can receive include: FM radio, UHF band signals, ISM signals, GSM, 3G and LTE mobile radio, GPS and satellite signals, and any that the reader can (legally) transmit of course! In this book we introduce readers to SDR methods by viewing and analysing downconverted RF signals in the time and frequency domains, and then provide extensive DSP enabled SDR design exercises which the reader can learn from. The hands-on SDR design examples begin with simple AM and FM receivers, and move on to the more challenging aspects of PHY layer DSP, where receive filter chains, real-time channelisers, and advanced concepts such as carrier synchronisers, digital PLL designs and QPSK timing and phase synchronisers are implemented. In the book we will also show how the RTL-SDR can be used with SDR transmitters to develop complete communication systems, capable of transmitting payloads such as simple text strings, images and audio across the lab desktop.

Discover all the security risks and exploits that can threaten iOS-based mobile devices iOS is Apple's mobile operating system for the iPhone and iPad. With the introduction of iOS5, many security issues have come to light. This book explains and discusses them all. The award-winning author team, experts in Mac and iOS security, examines the vulnerabilities and the internals of iOS to show how attacks can be mitigated. The book explains how the operating system works, its overall security architecture, and the security risks associated with it, as well as exploits,

rootkits, and other payloads developed for it. Covers iOS security architecture, vulnerability hunting, exploit writing, and how iOS jailbreaks work Explores iOS enterprise and encryption, code signing and memory protection, sandboxing, iPhone fuzzing, exploitation, ROP payloads, and baseband attacks Also examines kernel debugging and exploitation Companion website includes source code and tools to facilitate your efforts iOS Hacker's Handbook arms you with the tools needed to identify, understand, and foil iOS attacks.

Real-Time Digital Signal Processing from MATLAB to C with the TMS320C6x DSK

Digital Communication Systems Engineering with Software-Defined Radio

Multi-Standard CMOS Wireless Receivers: Analysis and Design

Getting Started with OpenBTS

Classical and Modern Direction-of-Arrival Estimation

Hacking Exposed Wireless

About the Author:-Dr. Manoj Kumar Currently working as Principal, DAV Institute of Engg. & Technology, Jalandhar and Coordinator, IKG PTU Regional Centre-DAVIET. He has more than 26 years and research and teaching experience. He has more than 96 Research Publications in leading International and National journals & conferences. He is Authored 08 Engineering Text Books and reviewed 05 Engineering Books. He is Recognized amongst top 25 Academic Leaders in

the country by Wipro Mission 10 X. Wipro Mission 10X in its endeavour of identifying top 25 academic leaders of the country organized 03 leveled Academic Leadership Workshops PAN India. He have the distinction of being one of the top 25 academic leaders, recognized by Wipro Mission 10X. Dr. Manoj Kumar was honoured with "LMA - Dayanand Munjal Award for Manager of the year 2017", the most prestigious annual award instituted by LMA since 1984 & sponsored by Hero Cycles Limited, Ludhiana, for his outstanding Innovative and Leadership Achievements. 6. Dr. Manoj Kumar was selected under AICTE-UKIERI Technical Leadership Development Program supported by British council for the AY 2018-19. In all, 200 people were selected under the project from amongst the 22 states in India. Under his able leadership, DAVIET, Jalandhar ranked 10th in the category of Outstanding Engineering Colleges of Excellence in India CSR-GHRDC Survey-2016 conducted by Global Human Resource Development Centre. Under his guidance DAVIET has been ranked 57th in the dream list of top 165 Private Engineering Colleges in India in 'India Today Group-MDRA Survey, 2018' for Best Colleges; and also ranked 11th in India in the Nationwide survey of Top Engineering Colleges of Excellence conducted by Competition Success Review (CSR), July 2018. Under his leadership, DAVIET has been conferred with 'Award for Education Excellence' by The

Indus Foundation during Indo-Global Education Summit & Expo 2017. Under his leadership, the institute has been conferred with 'Outstanding Institution Award (Engineering Colleges)' by National Institute of Technical Teachers Training and Research, Chandigarh (NITTTR) in September, 2018. 11. DAV Institute of Engineering & Technology (DAVIET), Jalandhar has been accredited with grade 'A' by NAAC in October, 2017; and recognized by UGC under section 2(f) under my stewardship .Under his stewardship, DAVIET has been conferred with the status of 'Host Institution (HI)/Business - Incubator (BI)' by MSME, New Delhi, under the scheme "Support for Entrepreneurial and Managerial Development of SMEs through Incubators" in 2018. The objective of the scheme is to provide early stage funding to nurture innovative business ideas that could be commercialized in a year. The scheme provides financial assistance that may vary from Rs. 4 to 8 lacs for each incubatee/idea subject to overall ceiling of Rs. 62.5 lacs for each business incubator.His Major Research domain is in Optical soliton transmission system (long-distance, high-speed optical transmission -An impressive practical implementation of the soliton concept has been achieved in fiber optics, where soliton pulses are used as the information carriers to transmit digital signals over long-haul. Optical soliton research, full of innovative spirit, has recently

arrived at the stage of a first real-world implementation of the soliton concept in communication systems. Realization of soliton-based transmission will clearly demonstrate how the results of the fundamental soliton theory can be successfully exploited in very important practical applications. He is Nominated as Head, National Conferences & Conclaves by the Jalandhar Management Association (JMA) Advisory Board as a part of the JMA Core Team Formation for the year 2015-16. He is Fellow member, The Institution of Engineers (India). and Life Member, Indian Science Congress Association, Life Member, Computer Society of India. life Member, Indian Society of Technical Education.

This book discusses the security issues in a wide range of wireless devices and systems, such as RFID, Bluetooth, ZigBee, GSM, LTE, and GPS. It collects the findings of recent research by the UnicornTeam at 360 Technology, and reviews the state-of-the-art literature on wireless security. The book also offers detailed case studies and theoretical treatments – specifically it lists numerous laboratory procedures, results, plots, commands and screenshots from real-world experiments. It is a valuable reference guide for practitioners and researchers who want to learn more about the advanced research findings and use the off-the-shelf tools to explore the wireless world.

Deploy your own private mobile network with

OpenBTS, the open source software project that converts between the GSM and UMTS wireless radio interface and open IP protocols. With this hands-on, step-by-step guide, you'll learn how to use OpenBTS to construct simple, flexible, and inexpensive mobile networks with software. OpenBTS can distribute any internet connection as a mobile network across a large geographic region, and provide connectivity to remote devices in the Internet of Things. Ideal for telecom and software engineers new to this technology, this book helps you build a basic OpenBTS network with voice and SMS services and data capabilities. From there, you can create your own niche product or experimental feature. Select hardware, and set up a base operating system for your project Configure, troubleshoot, and use performance-tuning techniques Expand to a true multinode mobile network complete with Mobility and Handover Add general packet radio service (GPRS) data connectivity, ideal for IoT devices Build applications on top of the OpenBTS NodeManager control and event APIs Software Defined Radio makes wireless communications easier, more efficient, and more reliable. This book bridges the gap between academic research and practical implementation. When beginning a project, practicing engineers, technical managers, and graduate students can save countless hours by considering the concepts presented in these pages. The author covers the

myriad options and trade-offs available when selecting an appropriate hardware architecture. As demonstrated here, the choice between hardware- and software-centric architecture can mean the difference between meeting an aggressive schedule and bogging down in endless design iterations. Because of the author's experience overseeing dozens of failed and successful developments, he is able to present many real-life examples. Some of the key concepts covered are: Choosing the right architecture for the market - laboratory, military, or commercial, Hardware platforms - FPGAs, GPPs, specialized and hybrid devices, Standardization efforts to ensure interoperability and portability, State-of-the-art components for radio frequency, mixed-signal, and baseband processing. The text requires only minimal knowledge of wireless communications; whenever possible, qualitative arguments are used instead of equations. An appendix provides a quick overview of wireless communications and introduces most of the concepts the readers will need to take advantage of the material. An essential introduction to SDR, this book is sure to be an invaluable addition to any technical bookshelf.

Mobile Multimedia Communications

Fundamentals of Communication Systems

Internet of Things and Sensors Networks in 5G

Wireless Communications

Fundamentals and Applications Intelligent Feature Selection for Machine Learning Using the Dynamic Wavelet Fingerprint

The latest wireless security solutions Protect your wireless systems from crippling attacks using the detailed security information in this comprehensive volume. Thoroughly updated to cover today's established and emerging wireless technologies, *Hacking Exposed Wireless*, second edition reveals how attackers use readily available and custom tools to target, infiltrate, and hijack vulnerable systems. This book discusses the latest developments in Wi-Fi, Bluetooth, ZigBee, and DECT hacking, and explains how to perform penetration tests, reinforce WPA protection schemes, mitigate packet injection risk, and lock down Bluetooth and RF devices. Cutting-edge techniques for exploiting Wi-Fi clients, WPA2, cordless phones, Bluetooth pairing, and ZigBee encryption are also covered in this fully revised guide. Build and configure your Wi-Fi attack arsenal with the best hardware and software tools Explore common weaknesses in WPA2 networks through the eyes of an attacker Leverage post-compromise remote client attacks on Windows 7 and Mac OS X Master attack tools to exploit wireless systems, including Aircrack-ng, coWPAtty, Pyrit, IPPON, FreeRADIUS-WPE, and the all new KillerBee Evaluate your threat to software update impersonation attacks on public networks Assess your threat to eavesdropping attacks on Wi-Fi, Bluetooth, ZigBee, and DECT networks using

commercial and custom tools Develop advanced skills leveraging Software Defined Radio and other flexible frameworks Apply comprehensive defenses to protect your wireless devices and infrastructure This guide to radio engineering covers every technique DSP and RF engineers need to build software radios for a wide variety of wireless systems using DSP techniques. Included are practical guidelines for choosing DSP microprocessors, and systematic, object-oriented software design techniques.

The Internet of Things (IoT) has attracted much attention from society, industry and academia as a promising technology that can enhance day to day activities, and the creation of new business models, products and services, and serve as a broad source of research topics and ideas. A future digital society is envisioned, composed of numerous wireless connected sensors and devices. Driven by huge demand, the massive IoT (mIoT) or massive machine type communication (mMTC) has been identified as one of the three main communication scenarios for 5G. In addition to connectivity, computing and storage and data management are also long-standing issues for low-cost devices and sensors. The book is a collection of outstanding technical research and industrial papers covering new research results, with a wide range of features within the 5G-and-beyond framework. It provides a range of discussions of the major research challenges and achievements within this topic.

Understand the RF and Digital Signal Processing Principles Driving Software-defined Radios!
Software-defined radio (SDR) technology is a configurable, low cost, and power efficient solution for multimode and multistandard wireless designs. This book describes software-defined radio concepts and design principles from the perspective of RF and digital signal processing as performed within this system. After an introductory overview of essential SDR concepts, this book examines signal modulation techniques, RF and digital system analysis and requirements, Nyquist and oversampled data conversion techniques, and multirate digital signal processing..

KEY TOPICS

- Modulation techniques Master analog and digital modulation schemes
- RF system-design parameters Examine noise and link budget analysis and Non-linear signal analysis and design methodology
- Essentials of baseband and bandpass sampling and gain control IF sampling architecture compared to traditional quadrature sampling, Nyquist zones, automatic gain control, and filtering
- Nyquist sampling converter architectures Analysis and design of various Nyquist data converters
- Oversampled data converter architectures Analysis and design of continuous-time and discrete-time Delta-Sigma converters
- Multirate signal processing Gain knowledge of interpolation, decimation, and fractional data rate conversion

*Offers readers a powerful set of analytical and design tools *Details real world designs *Comprehensive coverage makes

this a must have in the RF/Wireless industry
RF and Digital Signal Processing for Software-
Defined Radio

Physical Layer Exploration Lab Using the NI USRP :
Student Lab Manual

Build Open Source Mobile Networks

Fundamentals of Global Positioning System

Receivers

Hacking Exposed Linux

MATLAB Simulations for Radar Systems Design

Giving a basic overview of the technologies supporting cognitive radio this introductory-level text follows a logical approach, starting with the physical layer and concluding with applications and general issues. It provides a background to advances in the field of cognitive radios and a new exploration of how these radios can work together as a network. Cognitive Radio Networks starts with an introduction to the fundamentals of wireless communications, introducing technologies such as OFDM & MIMO. It moves onto cover software defined radio and explores and contrasts wireless, cooperative and cognitive networks and communications. Spectrum sensing, medium access control and network layer design are examined before the book concludes by covering the topics of trusted cognitive radio networks and spectrum management. Unique in providing a brief but

clear tutorial and reference to cognitive radio networks this book is a single reference, written at the appropriate level for newcomers as well as providing an encompassing text for those with more knowledge of the subject. One of the first books to provide a systematic description of cognitive radio networks Provides pervasive background knowledge including both wireless communications and wireless networks Written by leading experts in the field Full network stack investigation

This book, written by experts from universities and major industrial research laboratories, is devoted to the very hot topic of cognitive radio and networking for cooperative coexistence of heterogeneous wireless networks. Selected highly relevant advanced research is presented on spectrum sensing and progress toward the realization of accurate radio environment mapping, biomimetic learning for self-organizing networks, security threats (with a special focus on primary user emulation attack), and cognition as a tool for green next-generation networks. The research activities covered include work undertaken within the framework of the European COST Action IC0902, which is geared towards the definition of a European platform for cognitive radio and networks. Communications engineers, R&D engineers, researchers, and

students will all benefit from this complete reference on recent advances in wireless communications and the design and implementation of cognitive radio systems and networks.

This book focuses on the principles of wireless sensor networks (WSNs), their applications, and their analysis tools, with meticulous attention paid to definitions and terminology. This book presents the adopted technologies and their manufacturers in detail, making WSNs tangible for the reader. In introductory computer networking books, chapter sequencing follows the bottom-up or top-down architecture of the 7-layer protocol. This book addresses subsequent steps in this process, both horizontally and vertically, thus fostering a clearer and deeper understanding through chapters that elaborate on WSN concepts and issues. With such depth, this book is intended for a wide audience; it is meant to be a helper and motivator for senior undergraduates, postgraduates, researchers, and practitioners. It lays out important concepts and WSN-related applications; uses appropriate literature to back research and practical issues; and focuses on new trends. Senior undergraduate students can use it to familiarize themselves with conceptual foundations and practical project

implementations. For graduate students and researchers, test beds and simulators provide vital insights into analysis methods and tools for WSNs. Lastly, in addition to applications and deployment, practitioners will be able to learn more about WSN manufacturers and components within several platforms and test beds.

Based on the popular Artech House classic, Digital Communication Systems Engineering with Software-Defined Radio, this book provides a practical approach to quickly learning the software-defined radio (SDR) concepts needed for work in the field. This up-to-date volume guides readers on how to quickly prototype wireless designs using SDR for real-world testing and experimentation. This book explores advanced wireless communication techniques such as OFDM, LTE, WLA, and hardware targeting. Readers will gain an understanding of the core concepts behind wireless hardware, such as the radio frequency front-end, analog-to-digital and digital-to-analog converters, as well as various processing technologies. Moreover, this volume includes chapters on timing estimation, matched filtering, frame synchronization message decoding, and source coding. The orthogonal frequency division multiplexing is explained and details about HDL

code generation and deployment are provided. The book concludes with coverage of the WLAN toolbox with OFDM beacon reception and the LTE toolbox with downlink reception. Multiple case studies are provided throughout the book. Both MATLAB and Simulink source code are included to assist readers with their projects in the field.

Fundamentals of Digital Communication Systems

Linux Security Secrets and Solutions

Inside Radio: An Attack and Defense Guide

Programming with LabVIEW 2012

The Folded Normal Distribution

Wireless Security Secrets and Solutions

Starts with an overview of today's FPGA technology, devices, and tools for designing state-of-the-art DSP systems. A case study in the first chapter is the basis for more than 30 design examples throughout. The following chapters deal with computer arithmetic concepts, theory and the implementation of FIR and IIR filters, multirate digital signal processing systems, DFT and FFT algorithms, and advanced algorithms with high future potential. Each chapter contains exercises. The VERILOG source code and a glossary are given in the appendices, while the accompanying CD-ROM contains the examples in VHDL and Verilog code as well as the newest Altera "Baseline" software. This edition has a new chapter on adaptive filters, new sections on division and floating point arithmetics, an up-date to the current

Altera software, and some new exercises.

W. E. B. Du Bois was a public intellectual, sociologist, and activist on behalf of the African American community. He profoundly shaped black political culture in the United States through his founding role in the NAACP, as well as internationally through the Pan-African movement. Du Bois's sociological and historical research on African-American communities and culture broke ground in many areas, including the history of the post-Civil War Reconstruction period. Du Bois was also a prolific author of novels, autobiographical accounts, innumerable editorials and journalistic pieces, and several works of history. One of the most neglected and obscure books by W. E. B. Du Bois, *In Battle for Peace* frankly documents Du Bois's experiences following his attempts to mobilize Americans against the emerging conflict between the United States and the Soviet Union. A victim of McCarthyism, Du Bois endured a humiliating trial-he was later acquitted-and faced political persecution for over a decade. Part autobiography and part political statement, *In Battle for Peace* remains today a powerful analysis of race in America. With a series introduction by editor Henry Louis Gates, Jr., and an introduction by Manning Marable, this edition is essential for anyone interested in African American history.

"This unique resource provides you with a practical approach to quickly learning the software-defined radio concepts you need to know for your work in the field. By prototyping and evaluating actual digital communication systems capable of performing "over-the-air" wireless

data transmission and reception, this volume helps you attain a first-hand understanding of critical design trade-offs and issues. Moreover you gain a sense of the actual "real-world" operational behavior of these systems. With the purchase of the book, you gain access to several ready-made Simulink experiments at the publisher's website. This collection of laboratory experiments, along with several examples, enables you to successfully implement the designs discussed the book in a short period of time. These files can be executed using MATLAB version R2011b or later. "

For one- or two-semester, senior-level undergraduate courses in Communication Systems for Electrical and Computer Engineering majors. This text introduces the basic techniques used in modern communication systems and provides fundamental tools and methodologies used in the analysis and design of these systems. The authors emphasize digital communication systems, including new generations of wireless communication systems, satellite communications, and data transmission networks. A background in calculus, linear algebra, basic electronic circuits, linear system theory, and probability and random variables is assumed.

Wireless Communications from the Ground Up
ITCS & IRoA 2011